

REMARKS

Claims 1-56 are all the claims pending in the application. Claims 32-56 are rejected. Claims 1-31 are withdrawn from consideration and have been cancelled. Applicant has amended claim 32 so as to specify that the interfacial zone has a thickness of at least 1nm. This lower limit for the thickness is recited, for example, in sub-claim 53. Also, claims 53-56 have been amended by replacing the term "peripheral zone" with the term "interfacial zone" so as to be consistent with the wording of claim 32. On the basis of the foregoing amendments and the following comments, all of the pending claims should be patentable.

Election/Restriction

Applicant notes that the Examiner has treated the previous response as an election without traverse. Applicants have cancelled the non-elected claims.

Claim Rejections - 35 U.S.C. § 102

Claims 32, 41, 42, 45 and 46 are rejected under 35 U.S.C. § 102(e) as being anticipated by Sirringhaus et al (2003/0059975). This rejection is traversed for at least the following reasons.

First, it is important to note that the reference is assigned to the assignee of the present application, Plastic Logic Limited, and thereby is only available for a rejection based on anticipation. To the extent that the reference does not disclose specific features that are claimed, and resort is made to a rejection based on unpatentability under 35 U.S.C. § 103(a), the Applicants exercise their rights under 35 U.S.C. § 103(c) and request that the rejection be withdrawn. T

Turning to the Examiner's rejection of claims based on anticipation, only independent device claim 32 and dependent claims 41, 42, 45 and 46 are identified as being anticipated. Thus, the Applicants assume that all of the remaining claims are rejected as being obvious under 35 U.S.C. § 103. As noted subsequently, this rejection must be withdrawn.

The rejection based of the claims as being anticipated appears to be based on the disclosure in the cited reference of the technique of spin-coating a layer of F8T2 active

semiconducting polymer over PEDOT/PSS source and drain electrodes. The Examiner appears to be of the opinion that such a technique will inherently result in the formation of an interfacial zone comprising at least part of the F8T2 layer at the interface between the F8T2 layer and one of the PEDOT/PSS electrodes in which the F8T2 is doped with PSS from the PEDOT/PSS electrode so as to have a higher electrical conductivity than the interior of the F8T2 layer.

Applicants note that claim 53, which depends from claim 32 and specifies a lower limit of 1nm for the thickness of the interfacial zone, has been rejected as being obvious. The Examiner does not assert that the claim would be anticipated. The Examiner has suggested that the selection of such a thickness for the zone would have been obvious to the skilled person as a matter of determining optimum process conditions.

Claim 32 has been amended to incorporate the lower limit of claim 53. Thus, the claim cannot be anticipated and the rejection of the claim must be withdrawn. All of the other claims that depend from claim 32 now would necessarily be novel and would not be anticipated. Since these claims cannot be rejected as being obvious in view of Sirringhaus, taken alone or in combination with any other reference, the claims should be allowed.

Claims 32-56 are rejected under 35 U.S.C. § 102(e) as being anticipated by Mori et al. This rejection is traversed for at least the following reasons.

Applicants assume that this is a typographical error as no patent to Mori et al has been listed in the USPTO 892 nor discussed in the Office Action. If it is not a typographical error, the rejection is incomplete and does not satisfy the requirements of 37 C.F.R. § 1.104.

Claim Rejections - 35 U.S.C. § 103

Claims 32-56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sirringhaus et al (2003/0059975). This rejection is traversed for at least the following reasons.

As already noted, Sirringhaus et al should be removed as a reference for purposes of a rejection under 35 U'103(a) because of common ownership with the present application.

Even if the Examiner were able to formulate a rejection based on obviousness, and the formation of an interfacial zone may be an obvious result of the process described in

Sirringhaus, the cited reference does not teach or even suggest the provision of an interfacial zone or the advantages to be gained by the provision of such an interfacial zone, particularly one having a thickness as recited in newly amended claim 32. Accordingly, Sirringhaus does not provide any motivation to the skilled person to modify the process of the cited reference so as to form a zone having a thickness of at least 1nm.

Even if it is supposed for the sake of argument that one skilled in the art would have been motivated to form an interfacial zone having a thickness of at least 1nm, Sirringhaus does not provide any technical teaching as to how to form an interfacial zone having such a relatively large thickness. Applicants respectfully submit that they are the first to disclose how to form such a relatively thick interfacial zone. In particular, the present application discloses a technique which allows extending the dopant profile beyond the portion of the layer of semiconducting polymer that is in direct physical contact with the conductor. The present application teaches how the dopant zone can be extended beyond 1nm away from the surface of the conductor, such as, for example, by mixing a low-molecular weight dopant into the conducting ink.

The provision of such a relatively thick interfacial zone is significant because in order to achieve a beneficial effect for injection one needs to achieve a reduction of the injection barrier. If this is to be achieved by doping, the doping profile needs to extend over a distance of at least 1nm, and preferably more than 10nm, in order to have sufficient bending of the energy bands in the semiconductor in the doped region.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment under 37 C.F.R. § 1.111
Application No. 10/693, 100

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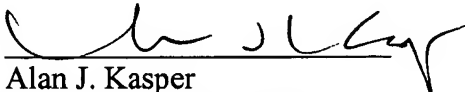
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